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Spaceport News

America's gateway to the universe. Leading the world in preparing and launching missions to Earth and beyond.

http://www-pao.ksc.nasa.gov/kscpao/snews/snewstoc.htm John F. Kennedy Space Center

KSC supports research conference for national audience

National and international research leaders from government, industry and academia gathered Dec. 1-4 in Lake Buena Vista to share ideas on how research and innovation can transform the world.

NASA-Kennedy Space Center partnered with event host University of Central Florida in support of the 55th annual National Conference on the Advancement of Research (NCAR 55).

Among those addressing the group of senior scientists and engineers were President Bush's Assistant for Science and Technology Jack Marburger, National Security Agency Associate Director of Research Eric Haseltine, best-selling technology author Jeremy Rifkin, NASA Advisor Gen. Spence "Sam" Armstrong, and heads of the nation's defense research complex.

Rep. Dave Weldon who serves as vice chair of the House Committee on Science Space Subcommittee and Congressman-Elect Tom Feeney were also among the distinguished speakers.

With this year's theme of "Transforming the World through Research and Innovation," the conference addressed the challenges and opportunities that now face the nation's research and development enterprise. Vice presidents of research, major laboratory directors and policymakers were in attendance.

In addition to KSC, also partnering with UCF and its Florida Solar Energy Center and Research Foundation in support of the event were the U.S. Air Force Office of Scientific Research, the U.S. Navy Office of Naval Research, U.S. Army STRICOM, The City of Orlando Office of the Mayor, the Metro Orlando Economic Development Commission and the Florida High Tech Corridor.

JoAnn Morgan, director of External Relations and Business Development at KSC, participated on a panel during the morning session Dec. 3. Moderated by Dr. M.J. Soileau, vice president for research at UCF, the session focused on "The Role of Partnerships in Florida's Technology-Based Economic Development Strategy." Other panel members were Enterprise Florida President Darrell Kelley and Florida High Tech Corridor Council President Randy Berridge.

Florida High Tech Corridor Council President Randy Berridge, Enterprise Florida President Darrell Kelley, and KSC Director of External Relations and Business Development JoAnn Morgan participate on panel.

(Center) U.S. Rep. Dave Weldon and Congressman-elect Tom Feeney chat with other attendees at the National Conference on the Advancement of Research hosted by the University of Central Florida.

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NASA to study cool ice, hot plasma, ocean winds

The month of December will see the launch of three NASA research missions – in two launches – to help us better understand and protect our home planet while continuing to search for life in our universe and inspire the next generation of explorers.

The ICESat, CHIPS and SeaWinds missions will help improve life here while searching for life beyond Earth.

ICESat

The Ice, Cloud and land Elevation Satellite is the benchmark NASA mission for measuring ice-sheet mass balance — knowledge vital to understanding and protecting our home planet. ICESat is due to launch from Vandenberg Air Force Base, Calif., on Dec. 19 at approximately 7:45 p.m. EST.

Once in its final orbital position, the satellite will orbit the Earth at an altitude of approximately 373 miles (600 kilometers).

"This mission will provide revolutionary insight into changes in ice and the role ice plays in our Earth system, using a spaceborne laser to look at the topography of ice both in the Antarctic and Greenland," said Dr. Ghassem Asrar, NASA's associate administrator for Earth Science.

"This information will help scientists determine whether the polar ice sheets are growing or shrinking, and how the ice masses may change under future climate conditions," Asrar said.

The ICESat mission will use a laser instrument to provide multi-year elevation data needed to determine ice-sheet mass balance. The spacecraft also will provide surface and vegetation data around the globe, in addition to specific coverage over the Greenland and Antarctic ice sheets.

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Recognizing Our People

Pascal Beaute, executive chef of the KSC Visitor Complex, named chef of the year

From serving up delectable space-themed dishes at Kennedy Space Center, to cooking up new school lunch ideas and mentoring at-risk youths, Executive Chef Pascal Beaute has his fingers in many pies these days. The Space Coast Chapter of the American Culinary Federation recognized him for his leadership and community involvement at a Nov. 18 awards ceremony, during which he was honored as Chef of the Year.

Chef Pascal Beaute

"I'm very pleased to be part of the Brevard County community," said Beaute, who began his career in France and worked in 17 countries with Club Med Inc.

"The Space Center is a great place to be – there's no place like it in the world."

Beaute joined Delaware North Parks Services of Spaceport Inc., operators of the KSC Visitor Complex, in 1997 as executive chef. He was instrumental in creating the successful catering program at the Visitor Complex and designing inventive new dishes for the three restaurants, which serve millions of visitors each year. Beaute's culinary talents range from elegant catered dishes, like sesame-crusted Ahi tuna and six-mushroom bisque, to everyday favorites such as rotisserie chicken, lasagne, and specialty salads – not to mention his signature dessert, the Space Shuttle-shaped "Chocolate Liftoff."

Under his leadership, the Visitor Complex's daily "Dine With an Astronaut" program has also flourished, offering guests the unique opportunity to meet a true space hero in person while enjoying a delicious catered lunch.

Beaute is extremely active in the community, serving on both the board of directors of the Space Coast Chapter of the Florida Restaurant Association and the advisory committee for the Brevard County School Board's culinary program. He coaches soccer at Divine Mercy Catholic School and is involved in the "High Five" Eckerd Youth Association. He also donates his time to an early intervention school in Brevard County.

For more information, call the Visitor Complex at **(321) 449-4444** or visit the Web site **www.kennedyspacecenter.com**.

Happy Anniversary Spaceport News!

This issue represents the 40th anniversary of the KSC employee publication. The first official issue of *Spaceport News* was December 13, 1962.

Stop by the KSC Photo Archive Library on the first floor of the Headquarters Building for a display of special editions and photos.

November Employees of the Month

From left to right: Larry Schultz (YA), Debbie Houston (TA), Sue Hutchinson (PH), Jan Phillips (OP), Isam Yunis (VA). Not Shown: Liz Wise (MK), Bob Parks (UB), Patricia Scheurer (XA)

December Employees of the Month

Back row, left to right: Grant Stoddard (YA), Gary Hendricks (VA), Dane Bishop (TA), Robert Franco (UB). Front row, left to right: Bridgett Mack (GG), Kathy Meesakul (PH), Crystal Gathers (AJ), Tamiko Fletcher (JP). Not Shown: Amber Hufft (CC).

AJ – Equal Opportunity Office
CC – Office of the Chief Counsel
GG – Chief Financial Office
JP – Cape Canaveral Spaceport Management Office
MK – Launch Integration
OP – Procurement Office
PH – Shuttle Processing
TA – Spaceport Services
UB – ISS/Payloads Processing
VA – ELV & Payload Carriers Programs
XA – External Relations and Business Development
YA – Spaceport Engineering & Technology

Delta IV adds to launch capabilities for future NASA ELV missions

Delta IV rocket launches Nov. 20 from Cape Canaveral Air Force Station. About 37 minutes after liftoff, the rocket deployed the W5 spacecraft to a geosynchronous transfer orbit with a perigee of 539 kilometers above the Earth.

NASA Kennedy Space Center managers closely watched the first flight of the Boeing Delta IV rocket Nov. 20.

The vehicle, featuring the first operational rocket engine built in the United States since the Space Shuttle Main Engine, successfully delivered the commercial telecommunications satellite W5 for Eutelsat S.A. following a dramatic evening launch Nov. 20.

The Delta IV lifted off at 5:39 p.m. EST from Space Launch Complex 37-B, Cape Canaveral Air Force Station. About 37 minutes after liftoff, the rocket deployed the W5 spacecraft to a geosynchronous transfer orbit with a perigee of 539 kilometers above the Earth.

NASA managers were pleased with the performance of the new vehicle, said Mike Benik, NASA director of Expendable Launch Vehicle Services.

"This success has enabled competition for our launch services providers. Now both Boeing and Lockheed-Martin have new vehicles that likely will be used for NASA expendable launch vehicle missions in the future," Benik said.

The two new vehicles will also likely be contenders for use with the new Orbital Space Plane recently announced by NASA Administrator Sean O'Keefe.

The space plane will provide NASA with the capability of a crew return vehicle and a vehicle specifically designed as a passenger carrier versus a passenger and payload carrier.

The next Delta IV launch, planned for early 2003, is the first mission for the U.S. Air Force EELV (Evolved Expendable Launch Vehicle) program. A Delta IV medium rocket will deploy DSCS III A3, a satellite for the Defense Satellite Communication System.

Boeing plans to launch up to five Delta IV missions in 2003, which include the first launch from Space Launch Complex 6 at Vandenberg Air Force Base, Calif.

ELV outreach promotes awareness of space among students

The Expendable Launch Vehicle (ELV) program at Kennedy Space Center is energetically guiding local students, through its ELV Outreach efforts, to learn all they can about the field.

By notifying employees about volunteer projects, students benefit from KSC's eager workforce. ELV employees are invited to speak at educational events, and are informed about volunteer prospects with promotional tools such as bulletin boards.

If employees aren't available, educators can enlighten students. Since 1988, teachers worldwide can download information for lesson plans at **http://spacelink.nasa.gov/NASA.Overview**.

ELV Outreach also developed a program to reach schools at all grade levels in the KSC and Vandenberg Air Force Base communities. The goal is to speak to children during Space Week, Career Day, launch and special events.

Wendy Westhoff, NASA's resident office for engineering lead at Orbital Science Corporation in Chandler, Ariz., visits a second-grade class monthly. The give-and-take system requires students to forfeit recess, and Westhoff competes with their lunch break for attention.

"I have a program that allows me to talk about the ELV program and follows the students' curriculum," said Westhoff. "For example, last month we talked about the Sun, so we talked about HESSI."

In May, Mike Stelzer, Mission Integration manager, ELV Mission Management Office, participated in Space Day activities at Divine Mercy Catholic School in Merritt Island, Fla. Interactive discussions took place with close to 200 children from kindergarten through eighth grade. This was held in conjunction with Space Week and sponsored by the school's Young Astronauts Club.

"At that time, we had the AQUA mission being readied for a California launch and the Contour mission from Florida. The students' interest rose as they found out about what the missions planned to do and where they were being launched, including the Contour mission being launched so close to home," said Stelzer.

"We had poster boards and handouts about the different launch vehicles NASA uses, which we let them use to match with the various missions and their launch sites."

See OUTREACH, Page 8

(From left) Cocoa Beach Senior High School students Lauren Branard, Allison Mitchell and Greg Marquino gather information about the KSC Expendable Launch Vehicle program. The display is part of ELV Outreach held in Merritt Island recently.

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KSC test facility aids researchers in preflight and post-flight astro

Expedition Five crew members are taking part in a series of experiments designed to help scientists find ways to help astronauts counter the effects of long-duration space flight on balance, mobility and eye coordination.

The studies — which will use an obstacle course, a treadmill and a Revolving chair — could also lead to better testing methods and treatment for people on Earth who suffer balance and coordination problems because of birth defects, illness or aging.

The astronauts who volunteered for the experiments underwent their first post-flight tests in Kennedy Space Center's Baseline Data Collection Facility (BDCF) before they returned to NASA'S Johnson Space Center in Houston, where their testing is continuing.

Although the human research program is managed at JSC, KSC provides support with the BDCF, an example of the interdependence of NASA Centers and the "One NASA" concept.

Dr. Jacob Bloomberg, a senior research scientist in the JSC Neurosciences Laboratory and the principal investigator in one of the upcoming experiments, stressed the importance of the BDCF to national and international researchers studying various aspects of astronaut physiology from bone loss to neurologic effects.

"Only here at Kennedy can you study the astronauts' response to space flight immediately after they land," Bloomberg said. "That's crucial to our understanding of how the astronauts are affected."

Expedition Five volunteers who spent six months living aboard the International Space Station began their testing soon after Endeavour landed Dec. 7, completing mission STS-113.

Astronauts who spend months on orbit typically take about 10 days to gradually regain balance and coordination, Bloomberg said. While those effects of weightlessness are uncomfortable on Earth, the discomfort would be greater for longer-term missions to Mars. It would hinder astronauts and leave them vulnerable after their landing on Mars.

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"We believe we will be able to use the data from the Expedition Five crew and future crews to find training methods that will allow long-term Space Station inhabitants to more quickly recover their balance and coordination when they return to a gravity environment," Bloomberg said. "It also has promising potential for the elderly and others who could undergo training to strengthen their balance and coordination."

Bloomberg pointed out that many senior citizens who break their bones first have a period of unsteadiness that precedes the fall. These balance disturbances are a typical part of the aging process, but they can be minimized through training, Bloomberg said.

"Your average person is aware of the need to add calcium to their diet and to work on strength training for the muscles and aerobic exercise to strengthen their heart, but they don't know about the importance of training for balance and coordination," Bloomberg said.

The BDCF, which is managed by Bionetics, functions as part of the biological sciences area of KSC's Spaceport Technology Center Directorate.

"At the BDCF we work to facilitate human research by NASA scientists, NASA-funded scientists and other space agencies," said Mimi Shao, a Bionetics' rsearch scientist from the Life Sciences Flight Experiment Program at KSC.

"It is rewarding to support research that is designed to maximize the safety, efficiency and effectiveness of space exploration. My personal motivation stems from improvements in medical science and the promise of life-enhancing breakthroughs for the astronauts and the general population here on Earth."

(Photos on pages 4 - 5) Testing their bodies' responses to a variety of physiological exercises and tests are (far left) Chris Miller, helped by Ajit Mulavara; Brian Peters monitoring equipment; Chris Miller running the obstacle course. In the chair (above) is Dr. Scott Wood being helped by Dr. Gil Clement, who is also monitoring the equipment. The data will provide a baseline for similar tests of astronauts returning from Shuttle flights and longer-term missions on the International Space Station. Mulavara is assistant professor at Baylor College of Medicine; Miller is a biomechanical engineer, Wyle Laboratores; and Peters is a biomedical engineer, Wyle Laboratories.

KSC Direct! online programming provides a specialized news venue

As internet technology has improved, the public's expectations have risen to include on-demand video and 24-hour news coverage from the Kennedy Space Center public Web site. The KSC Web Studio has answered this need with KSC Direct!, an ongoing series of programs highlighting current KSC events.

Because the Web Studio is located at the KSC News Center, KSC Direct!'s team of producers and writers ensures that visitors get the most up-to-date information in a timely manner. While KSC Direct! web programming complements the coverage on NASA TV, it does have its own format and unique programming, allowing it to stand alone as a source of breaking news.

KSC Direct! provides content in two formats. Streaming programs are webcast in real-time, and downloadable clips are offered as part of live launch and landing coverage or as featured videos on KSC's home page.

"Our goal with KSC Direct! is to bring timely KSC programming to our viewers in an entertaining, interactive and informative new format," said Dennis Armstrong, Web Multimedia manager and executive producer.

Two current live webcast series are ongoing: the Shuttle Launch Series, featuring prelaunch and live launch coverage, and the Anniversary Lecture Series, celebrating KSC's 40th anniversary. Both programs add interactivity by allowing viewers to submit questions to a Question Board, which typically opens about a week before its associated webcast. KSC Direct! staff edit and approve each question before making them visible to the public. A handful of questions are then selected and answered by featured experts during the show. Question Boards usually close about two hours before the program begins.

Shuttle launch coverage typically includes three or four days of programming, with the number of shows depending on the scope of the mission. The shows feature experts in mission-relevant topics such as the crew, the payloads, Shuttle processing, the International Space Station, or specific experiments. Launch day coverage includes an interview and question-and-answer session with an astronaut.

In the KSC Web Studio, while Webmaster Patrick O'Rourke, (on the phone) watches, Chris Chamberlain (center) works the controls for the KSC Direct! webcast. In the background is Becky Tisdale.

To mark KSC's 40th anniversary in July 2002, KSC Direct! kicked off a series of shows designed to educate viewers about the Center's historical figures and events. The ongoing programs feature experts on KSC and NASA history who also answer questions submitted ahead of time via Question Boards.

KSC Direct! producers and writers have adapted to an environment in which the news is constantly evolving, and plans often change with very little warning. Featured experts donate their time to the programs, and their schedules can change as well.

Be sure to check the KSC home page each Friday afternoon for a one-minute weekly overview called the KSC Direct! News Brief. The KSC Direct! News Brief is now also available in Spanish to broaden the availability of KSC news and the U.S. space program to Spanish-speaking space enthusiasts.

The latest KSC Direct! program schedule and archives are available at **http://www.ksc.nasa.gov/kscdirect**.

ELV... *Continued from Page 1*

The Geoscience Laser Altimeter System, or "GLAS" instrument, on ICESat will use a laser to measure the time it takes for light to travel to the reflecting object and return to the satellite.

The data on the distance to the surface, the position of the satellite in space, and the pointing of the laser are all combined to calculate the elevation and position of each point measurement on the Earth. The laser will perform these measurements 40 times each second.

CHIPS

Launching with ICESat is NASA's first University-Class Explorer mission, a suitcase-sized satellite called the Cosmic Hot Interstellar Plasma Spectrometer (CHIPS), designed to explore the birthplace of solar systems. CHIPS will study very hot, very low-density gas in the vast spaces between the stars, known as the interstellar medium, searching for important clues about formation,

Our solar system is located in a region of space scientists call the Local Bubble, which is about 300 light-years in diameter and is filled with gas much less dense than the average interstellar medium.

This gas also is extremely hot — about 1.8 million degrees Fahrenheit, or about 180 times as hot as the surface of our Sun. It is this extremely diffuse gas inside the Local Bubble that the CHIPS mission is studying.

SeaWinds

A third NASA mission, SeaWinds, is NASA's latest Earth-monitoring instrument for measuring the speed and direction of winds over Earth's oceans. Set to launch aboard Japan's Advanced Earth Observing Satellite II (Adeos II) at 8:31 p.m. EST Dec.13 from the Tanegashima Space Center, the mission is expected to yield improved global weather forecasts and new insights into various Earth research investigations.

"Winds play a major role in every aspect of Earth's weather," Asrar said. 'They directly affect the turbulent exchanges of heat, moisture and greenhouse gases between Earth's atmosphere and the ocean that drive ocean circulation and climate.

The SeaWinds instrument will provide a critical tool for improving weather forecasting, detecting and monitoring severe marine storms, identifying subtle changes in the global climate and better understanding global weather abnormalities, such as El Nino and La Nina. NASA is pleased to partner with Japan on this important endeavor."

The mission will help scientists determine the location, structure and strength of severe marine storms – hurricanes in the Atlantic, typhoons near Asia and mid-latitude cyclones worldwide — which are among the most destructive of all natural phenomena.

The National Oceanic and Atmospheric Administration (NOAA), a chief mission partner, will use the data to improve weather forecasting and storm warnings, helping forecasters more accurately determine the paths and intensities of tropical storms and hurricanes.

SeaWinds will map wind speed and direction across 90 percent of the Earth's ice-free oceans every two days. Up to 15 times a day, Adeos II will beam down SeaWinds science data to ground stations operated by NASA and the National Space Development Agency of Japan, which will relay them to scientists and weather forecasters.

KSC Geographic Information System (GIS) Day showcases real-world applications of technology

In hope that the Geographic Information System (GIS) becomes a tool that can help everyone on the Spaceport in their day-to-day activities, the SGS Real Property GIS Office sponsored a National GIS Day celebration. These exhibits and demonstrations took place at four separate locations across Cape Canaveral Spaceport.

GIS Day is a national event that encourages users and vendors of geographic information systems around the country to open doors at schools, businesses and the public to showcase real-world applications of this important technology. Exhibits and demonstrations at different locations around the country were held to promote the explosive interest and multifaceted use of geographical information.

The Nov. 20 event featured manned exhibits with printed material explaining concepts and capabilities of the Cape Canaveral Spaceport GIS. Exhibits located at the KSC Headquarters, Operations and Checkout and Operations Support Building lobbies included live demonstrations of the system enabling on-lookers to see detailed land and facility data against infrared and aerial photography. An exhibit located at the CCAFS cafeteria provided on-lookers with a host of information packages including a raffle opportunity for a Cape Canaveral Spaceport photo.

Local system applications were developed to assist 911 operations, security forces, facility planners and managers. Intense analysis packages are also being developed to arm engineers with tools to better plan and maintain water and electrical distribution systems across the Spaceport. Data within the system include land and facility information about the Spaceport including the Air Force's Florida annex sites at Malabar, Melbourne Beach and Jonathan Dickinson State Park.

"The Cape Canaveral Spaceport GIS is powered by an elite team of JBOSC technicians, developers, analysts and managers focused on providing the location information system of choice for government customers," said Bill Stoeckel, GIS Real Property supervisor.

Marie Quiaoit, GIS process administrator, and Cedric Moffett (seated), GIS technician, demonstrate the Geographic Information System.

While the team was pleased with the turnout and interest, future events are already in the works. "We are planning bigger and better things for next year," said Stephanie Anders Webb, SGS GIS analyst.

"We hope to have a larger audience by then and to be able to offer hands-on training sessions, and live demonstrations of our various applications."

For more GIS information, visit* http:\\gis.ksc.nasa.gov, *or e-mail GISTeam@jbosc.ksc.nasa.gov.

Florida Space Grants given to 19 schools

On Nov. 5, Florida teachers from 19 schools received grants to implement aerospace-oriented education projects in their school classrooms. The grants are part of a growing statewide effort to use aerospace concepts for teaching reading, science, mathematics, engineering and technology. Florida Space Grant Consortium (FSGC), a NASA-sponsored partnership of Florida colleges and universities, awarded the $500 grants.

"I see two benefits from this FSGC Aerospace Education Grant program," said Jaydeep Mukherjee, FSCG administrator. "First, it initiates elementary school teachers into the grant writing process and, second, it provides students an opportunity to participate in aerospace-related hands-on activities."

Educators statewide were invited by FSGC to propose aerospace-oriented projects that are aligned with Florida's Sunshine State Standards. There are six approved projects:

- Force / Motion / Survival in Space
- Hot Air Balloon Project
- Rockets of the New Millennium
- 3-2-1 Lift Off
- From Kitty Hawk to Space 1903-2003 ... And Beyond
- Falcons in Flight; Reach for the Stars

FSGC teamed with NASA Kennedy Space Center, other Florida space-related organizations and the Florida Department of Education to promote statewide use of aerospace education programs. These programs include NASA's impressive space education resources to support reading, science, mathematics and technology education for students.

Grant recipients are *Herbert Silio*, Herbert C. Hoover Middle School; *Tammy Matthews*, Oriole Elementary School; *Laura Headley*, Andrew Jackson Middle School; *Nicola Isaac*, Endeavour Elementary Magnet School; *Nancy Rehwoldt*, Surfside Elementary School; *Charles Gillespie*, Mims Elementary School; *Richard Crawford*, Middleton High School; *Carolyn Hoffmann* and *Jane Nelson*, University High School; *Eugene Bush*, Osteen Elementary School; *Damon Talley*, Bethune-Cookman College; *Lynne Gelinas,* Endeavour Elementary School; *Erin Hayes*, Meadow Woods Middle School; *Margaret Trimm*, Bronson Elementary School; *Paul Becht,* Bishop Moore Catholic High School; *Sharon Daniels,* Golfview Elementary Magnet School; *Karen Flickinger,* Satellite High School; *Denise Hulette* and *Heather Fontana,* Conway Middle School; *Vicki Garrett*, Marianna High School; and *Laura Suprenard*, Durrance Elementary School.

Hosted at the University of Central Florida, FSGC is part of a nationwide NASA-sponsored network of 52 consortia responsible for supporting space research, education and outreach projects.

***For more information, contact Dr. Penny Haskins, 386-462-9696, or go to the Web site* http://fsgc.engr.ucf.edu/.**

Remembering Our Heritage

Relay 1 provides first transatlantic TV signals

Winter descended on Brevard County early in 1962. Jim Johnson, NASA's spacecraft coordinator for the Relay 1 satellite, recalls that December well. "I had been working on the pad all week leading up to launch, and it was cold!"

Adding to the surreal Florida experience, an emergency shower on an upper level of Pad 17A was damaged by the cold, and water dripping down to the pad's eighth level froze, creating icicles.

Unusual cold produces icicles on eighth level of service structure 17A.

Fortunately, the cold did not impede the launch, and Relay 1 lifted off Dec. 13 at 6:30 p.m. EST aboard an improved Thor-Delta vehicle, being used for the first time. Designed by RCA and weighing only 172 pounds, Relay 1 became NASA's first active repeater satellite to link three continents.

Operation of the satellite's communication system was delayed for three weeks after launch until Jan. 3 due to a malfunctioning voltage regulator switch that caused an abnormal power drain. After the power difficulty corrected itself, the first transatlantic television signals were sent between the United Kingdom and the United States — between Goonhilly, England, and Nutley, N.J., specifically — on Jan. 7.

In 1962, the spacecraft coordinator, the equivalent of a launch site support manager today, worked for the Fields Projects Branch of Goddard Space Flight Center, the organization that later became KSC's Unmanned Launch Operations Directorate.

Johnson supervised the mating of the satellite to the launch vehicle's third stage at the spin test that followed. "The test took place on the Capeside, in the Delta Spin Test Facility — converted from the old Bomarc launch facility, which used to open up like a clamshell."

The facility was chosen for its remote location as a safety precaution since the Delta third stages being handled were already fueled with solid propellant.

After the satisfactory spin test, the Relay 1/third stage combination was transported to the pad where it was mated to the vehicle's second stage. A straight fairing, the same diameter as the second stage, was then installed to protect the satellite.

1962 was the year that Johnson proved himself to be a master scheduler. He and his wife Glenda had recently moved from the Melbourne area into a new house in Cocoa Beach and were expecting their third child. He had not been home much as this was the eleventh launch of the year.

Delivery of the baby and the launch of Relay 1 were both scheduled for around the same date, and she wanted to know where he intended to be when the baby arrived.

Johnson recalls, "I had been working for NASA a little more than a year and felt I should be in the blockhouse for launch, but I wanted to be there for my wife, too." All the significant events in his personal and professional life lined up perfectly though, and his son Glenn cooperated by arriving a little early — on Nov. 30.

A Delta vehicle lifts off the pad at 6:30 p.m. EST from Cape Canaveral, Fla., carrying the Relay experimental satellite.

OUTREACH. . .

Continued fromPage 3

Another advantage is volunteers enjoy the visits as much as the students. "Two of my children attend the school and were excited to see me when they came through, including the talk about what I do with NASA space missions," Stelzer shared.

ELV launch envelopes are also useful educational tools. "The envelopes have the mission decal and are date-stamped by the post office the day of launch. An insert card inside the envelope describes the spacecraft, mission and what vehicle it will be launched from," said Launch Services Support Specialist Martha Vreeland. The envelopes are distributed at schools ELV representatives visit.

"My goal is to target a wide variety of schools in our different launch locations. An ELV poster with a science project on the back will be placed on Spacelink," said Vreeland.

"Teachers nationwide will be able to download this and use it in their classrooms. Teachers can also call the Education Office requesting hard copies. The big picture is to distribute ELV information nationwide."

For more information on KSC's ELV Outreach initiatives visit **http://www.ksc.nasa.gov/elvnew/elv.htm** or call 853-7144.

John F. Kennedy Space

Spaceport News

Spaceport News is an official publication of the Kennedy Space Center and is published on alternate Fridays by External Relations and Business Development in the interest of KSC civil service and contractor employees.

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